Original Research

Suicide as globalisation's Black Swan: global evidence

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ABSTRACT

Objectives: This empirical study investigated the relationship between globalisation and suicide rates. We examined whether there is a beneficial or harmful relationship between economic, political and social globalisation and the suicide rate. We also estimated whether this relationship differs in high-, middle- and low-income countries.

Study design: Using panel data from 190 countries over the period 1990–2019, we examined the relationship between globalisation and suicide.

Method: We compared the estimated effect of globalisation on suicide rates using robust fixed-effects models. Our results were robust to dynamic models and models with country-specific time trends.

Results: The effect of the KOF Globalisation Index on suicide was initially positive, leading to an increase in the suicide rate before decreasing. Concerning the effects of economic, political, and social dimensions of globalisation, we found a similar inverted U-shaped relationship. Unlike the middle-income and high-income countries, we found a U-shaped relationship for the case of low-income countries, indicating that suicide decreased with globalisation and then increased as globalisation continues to increase. Moreover, the effect of political globalisation disappeared in low-income countries.

Conclusion: Policy-makers in high- and middle-income countries, below the turning points, and low-income countries, above the turning points, must protect vulnerable groups from globalisation's disruptive forces, which can increase social inequality. Consideration of local and global factors of suicide will potentially stimulate the development of measures that might reduce the suicide rate.

Introduction

Suicide is a major public health concern worldwide, and every year, an alarming number of people commit suicide. More than half of suicides occur in low- and middle-income countries, where mental health services are scarce.[1] Furthermore, suicide has resulted in the loss of valuable human capital to society and has substantially influenced life expectancy.[2,3] It also has a devastating and widespread impact on family members, friends, acquaintances, healthcare professionals and local communities. To reduce the global suicide rate, we must first improve our understanding of suicidal behaviour and its dynamics. For this purpose, the United

Nations has included suicide prevention as one of 17 goals in its 2030 Agenda for Sustainable Development.[4] Accordingly, we aimed to investigate the relationship between globalisation and the suicide rate on a global scale.

Globalisation (the late 20th century's 'big idea') captures components of a common view of increasing global interconnections in all sectors of society.[5,6] We know that globalisation is transforming our physical reality and that its consequences on inequality, public services, employment and our environments are progressively reshaping our mental health.[7] Changes in economic, political and social interactions are all part of this process. Nevertheless, there has been little discussion of the relationship between globalisation and suicide since Milner et al.'s[8,9] studies.[10] Using the KOF Globalisation Index, we contributed to the literature by estimating the association between globalisation and the suicide rate by countries' income levels separately by subgroups of globalisation. Our research offers new insights to support global policy-makers in developing more effective responses to suicide.

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Durkheim[11] proposed that suicide rates varied with economic and social change and considered that societal changes caused a breakdown in protective ties and values, increasing the likelihood of suicide. Milner et al.[8] supported Durkheim's view with their findings that the changes associated with modernisation were reflected in the increase in suicide rates among European countries. In addition, they argued that global dynamics could impact countries' economic, political, social and cultural systems and contextual determinants of health and mortality. In terms of mental health, Pierce and Schott[12] provided evidence that post-2000 US-China trade liberalisation was associated with an increase in suicide deaths among manufacturing workers in US states. However, although more studies are being conducted on the health-related implications of globalisation, less is known about its impact on suicide or mental health.[7,13–16] In addition, Cai et al.[3] also emphasised the need for globalisation and suicide research as a necessary step forwards in their scientometric analysis of suicide research.

In this article, we investigated the non-linear association between globalisation and suicide rate in three decades. Our hypothesis was that there is a significant relationship between the globalisation of societies and increasing suicide rates. For the purpose of the study, we used a measure of globalisation referred to as the 'KOF Globalisation Index' and its subindices, which Dreher[17] developed for almost every country.[18] To our knowledge, this is the first study to use the recently revised globalisation index as a possible predictor of suicide rate in a global context, including 190 countries for the years 1990–2019. In addition, the relationship between economic, political and social globalisation, which are subdimensions of globalisation, and the suicide rate were used for the first time in this study. Furthermore, this study considered the role of globalisation in countries with varying income levels. According to the World Health Organization,[1] suicide is a worldwide phenomenon. However, few studies include low- and middle-income countries, although these countries account for most suicide deaths worldwide.[19] To gain deeper insight into the problem, we extended the longitudinal suicide studies to include more countries and categorise them according to their income levels.

Methods

Data

Our data consisted of 190 countries for the years 1990–2019. The dependent variable was the suicide rate, measured as the number of suicides per 100,000 population in a country, and it was obtained from the Institute for Health Metrics and Evaluation (IHME)[20] for the publicly available years 1990–2019. The main variables of interest were the KOF Globalisation Index and its subindices: the Economic Globalisation Index, Political Globalisation Index and Social Globalisation Index (for more details, see Dreher[17] and Gygli et al.[18]), reflecting three different dimensions of globalisation. We used the latest version of the data provided in the database of the Swiss Federal Institute of Technology (KOF).[18]

The analysis included a set of control variables based on the previous literature, all of which were assumed to be exogenous in our empirical model. We reported the descriptive statistics in Table 1. First, we included the age-standardised prevalence of the depressive orders, as depression is linked to the risk of suicide[21] because there are significant differences in how depression is diagnosed across cultures.[22] Second, considering the mental impact of changes in income, the annual growth rate of the gross domestic product per capita was added to the analysis, used in constant US dollars.[23] Third, we used the unemployment rate to control job market conditions.[8,24] The unemployment rate represented the

number of people who are unemployed as a share of the labour force. The fourth and fifth control variables were female labour force participation[25] as a proxy for social integration and the rural population rate in a country.[8] These control variables were selected as potential predictors of suicide rates at the national level over time. Suicide rates were also controlled for age structure across countries and over time; however, the age structure variable causes a multicollinearity problem in our model. We reported the correlation matrix for the variables in Table 2.

Statistical analysis

The analysed model was a fixed-effects model based on the literature.[26–28] Furthermore, we controlled for the year effects in the analysis. The adopted model is shown in Equation (1).

$$Suicide\ Rate_{i,t} = a + \beta_1 Globalisation_{i,t} + \beta_2 Globalisation_{i,t}^2 + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $Suicide\ Rate_{i,t}$ is the suicide rate for country i at year t, and $\varepsilon_{i,t}$ is the error term. $Globalization_{i,t}$ denotes the KOF Globalisation Index and its subindices Economic Globalisation Index, Political Globalisation Index and Social Globalisation Index, whereas $Globalization_{i,t}^2$ is the quadratic form of the said variables. Each index entered the estimation separately with its quadratic form. Finally, $X_{i,t}$ is the set of control variables used in the analysis. Suicide and globalisation may be affected by various factors, including a country's laws, culture and location, but the fixed-effect model controls for these potential confounding factors.

In the first step, we examined the association between the suicide rate and globalisation with its subindices in the full sample. Following the panel data analysis of 190 countries, we observed the association between the suicide rate and the main regressors for three country groups based on their income levels, namely, high-, middle- and low-income countries. These groups are formed based on the World Bank classification in 2019,[29] the last year to include in the analysis. In addition, we performed sensitivity analyses in our models, taking into account the country-specific time trend. We replicated our models with country-specific time trends, including estimations in different income level groups. Finally, we also estimated the dynamic relationship between suicide rates and globalisation and used a two-step generalised method of moments estimator approach for the global sample.[30]

Results

Table 3 presented the estimated effects of globalisation on the suicide rate. First, we estimated a model with only the globalisation index and its quadratic form as the explanatory variables (Column 1 in Table 3). Then, we extended this model in Table 3 by introducing subdimensions of globalisation (Columns 2–4). We introduced in Table 3 the control variables for each of the four models in Columns 5–8. The results of the fixed-effects analysis documented a significant and non-linear relationship between the KOF Globalisation Index and the suicide rate. In addition, we presented the turning point, when indices and their quadratic forms are significant at least at 10%, and the average of globalisation for all models.

The effect of globalisation on suicide was initially positive, leading to an increase in the suicide rate before decreasing. More specifically, in Column 1 in Table 3, the coefficients of globalisation and globalisation[2] were 0.349 and −0.004, respectively. The relationship between globalisation and the suicide rate remained relatively unchanged after the control variables have been

Table 1
Summary statistics.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum	Description	Sources
Dependent variable							
Suicide rate	6120	11.34	9.39	1.43	95.57	Suicide mortality rate (per 100,000 population)	Institute for Health Metrics and Evaluation[20]
Variables of interest							
Globalisation	5658	54.49	16.15	18.87	90.91	KOF Globalisation Index	
Economic globalisation	5511	53.52	15.89	14.51	94.96	KOF Economic Globalisation Index	
Political globalisation	5768	56.21	24.57	1.19	98.14	KOF Political Globalisation Index	Gygli et al.[18]
Social globalisation	5768	53.92	20.51	6.40	92	KOF Social Globalisation Index	
Control variables							
Depression	6032	3.95	0.95	1.64	7.69	Prevalence of depressive disorders, age standardised	Institute for Health Metrics and Evaluation[41]
Income growth	5618	2	5.99	−64.99	140.37	GDP per capita growth (annual %)	
Unemployment	5278	8.28	6.43	0.10	38.80	Unemployment rate, modelled ILO estimate	
Female labour participation	5457	40.32	9.64	8.26	56.04	Labour force, female (% of total labour force)	World Bank[42]
Rural population	5992	43.94	23.96	0	94.58	Rural population (% of total population)	

Note: The variables are explained in detail in the description column. All data sources are publicly available.

accounted for (Column 5 in Table 3). These results for globalisation imply that the effect of globalisation is positive up to a certain point, after which the effect becomes negative. We found similar results for economic, political, and social globalisation, social globalisation's coefficient decreases to 0.079, and social globalisation^2 is −0.001 (Column 8 in Table 3). As a result, we found similar turning points for globalisation and its subindices, such as economic and political globalisation, 51.49, 50.09 and 53.93, respectively (Columns 5, 6 and 7 in Table 3). These results were also slightly below the average for globalisation. However, we found that the effect of social globalisation is positive up to 31.02 (Column 8 in Table 3); after that, the effect became negative. Compared with the other indices' results, it was noticeably lower than the average value. Overall, we observed a significant inverted U-shaped relationship between the KOF Globalisation Index, including all subindices, and the suicide rate.

In Table 4, we analysed whether the effects of globalisation varied in different income-level country groups. The estimations showed a significant inverted U-shaped relationship between the KOF Globalisation Index and the suicide rate for high- and middle-income countries; however, the direction of the relationship was different in low-income countries. The estimated coefficient of globalisation for high-income countries was 1.190, and globalisation^2 is −0.010 (Column 1 in Table 4). We found that the effect of globalisation in high-income countries is positive up to 62.69; after

that, the effect turns negative. For economic, political and social globalisation, we documented a similar relationship between globalisation and suicide rate, and turning points were 62.52, 54.64 and 60.53, respectively (Columns 2, 3 and 4 in Table 4). This result demonstrated that the average relationship between globalisation and suicide was more substantial in high-income countries than in others (Column 1 in Table 4; *see for country-specific turning points for 1990 and 2019*, Appendix Fig. A1). Although the results for middle-income countries (Columns 5—8 in Table 4; see Appendix Fig. A2) were similar to those we found without country separation, for the case of low-income countries, we observed a U-shaped relationship between globalisation and the suicide rate (Columns 9—12 in Table 4; see Appendix Fig. A3). This suggests that globalisation decreases the suicide rate in low-income countries in the beginning periods to 40.30 (Column 9); after that, the suicide rate increases as the countries become more globalised.

Looking at economic globalisation, we found a similar inverted U-shaped relationship with globalisation in the case of high-income countries (Column 2 in Table 4), while we again saw a U-shaped relationship for low-income countries (Column 10 in Table 4). According to our findings, economic globalisation had no significant relationship with economic globalisation for middle-income countries (Column 6 in Table 4). Regarding political globalisation, we reported a similar relationship between globalisation and suicide rates in high- and middle-income countries (Columns 3

Table 2
Matrix of correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Suicide rate	1.000									
Globalisation	0.269	1.000								
Economic globalisation	0.226	0.849	1.000							
Political globalisation	0.181	0.784	0.421	1.000						
Social globalisation	0.268	0.874	0.798	0.441	1.000					
Depression	−0.011	−0.168	−0.137	−0.043	−0.247	1.000				
Income growth	0.050	0.028	0.070	0.012	0.001	−0.040	1.000			
Unemployment	0.159	0.053	0.074	−0.056	0.139	0.073	0.010	1.000		
Female labour participation	0.317	0.046	0.013	0.051	0.032	−0.076	0.022	−0.076	1.000	
Rural population	−0.122	−0.687	−0.585	−0.464	−0.686	0.061	0.045	−0.131	0.200	1.000

Note: Table reports the matrix of Pearson correlations. Suicide rate is the dependent variable, whereas the globalisation and its subindices (variables from 2 to 5) are main variables of interest, which enter the estimation separately due to the high correlation.

Table 3
Fixed-effects estimations of the effect of globalisation and subindices on suicide rates.

Variable	Model of suicide rate							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Globalisation	0.349***				0.338***			
	(0.089)				(0.070)			
Globalisation^2	−0.004***				−0.003***			
	(0.001)				(0.001)			
Economic globalisation		0.316***				0.203***		
		(0.083)				(0.058)		
Economic globalisation^2		−0.003***				−0.002***		
		(0.001)				(0.001)		
Political globalisation			0.187***				0.222***	
			(0.052)				(0.045)	
Political globalisation^2			−0.002***				−0.002***	
			(0.001)				(0.000)	
Social globalisation				0.101*				0.079*
				(0.052)				(0.047)
Social globalisation^2				−0.002***				−0.001***
				(0.001)				(0.000)
Depression					6.169***	6.389***	6.277***	6.511***
					(1.045)	(1.151)	(1.048)	(1.106)
Income growth					0.006	0.011	0.013	0.012
					(0.007)	(0.007)	(0.008)	(0.008)
Unemployment					0.085	0.096	0.091	0.101*
					(0.058)	(0.059)	(0.056)	(0.058)
Female labour participation					0.067	0.006	0.037	0.030
					(0.068)	(0.064)	(0.060)	(0.068)
Rural population					−0.0017	−0.010	−0.045	−0.009
					(0.036)	(0.039)	(0.037)	(0.038)
Constant	3.388	3.949*	7.553***	10.460***	−24.955***	−19.947***	−19.237***	−17.505***
	(2.176)	(2.006)	(1.182)	(1.478)	(5.361)	(5.241)	(4.899)	(5.496)
Observations	5658	5511	5768	5768	4838	4806	4884	4884
Number of countries	190	186	194	194	175	174	177	177
Turning points	48.54	49.12	52.07	33.84	51.49	50.09	53.93	31.02
Mean globalisation	54.49	53.52	56.21	53.93	54.49	53.52	56.21	53.93
R-squared	0.137	0.124	0.105	0.099	0.323	0.291	0.315	0.296

Note: The first four columns present the baseline estimations for the globalisation index, its subindices, and their quadratic forms. The columns from 5 to 8 include the estimations with control variables. We control for year fixed effects and employ fixed effects models. Estimations report the unstandardised beta-coefficients. Robust standard errors are in parentheses. We calculate the turning point when indices and their quadratic forms are significant at least at 10%. Mean globalisation presents the average of the globalisation and its' subindices for the global sample.
***, ** and * indicate the significance levels at 1%, 5% and 10%, respectively.

and 7 in Table 4, respectively), but this effect disappeared in low-income countries. However, social globalisation followed the same pattern as globalisation only for high-income countries: a positive linear connection and a negative quadratic relationship, and the opposite was true for low-income countries.

Discussion

This was the first study to examine the relationship between globalisation's economic, political and social subdimensions and suicide rates. Furthermore, for the first time, we used the recently revised globalisation index to estimate suicide rates in 190 countries from 1990 to 2019. Our main finding was that globalisation initially increases suicide before decreasing it. This was in line with the findings of Milner et al.[8] Concerning the effects of economic, political and social dimensions of globalisation on the suicide rate, we found a similar non-linear relationship. These subindices were first associated with an increase in the suicide rate and then a decrease.

We found interesting and different results when we subgrouped the countries based on income levels. Although we found that economic and social globalisation positively correlated with suicides in high-income countries, we observed the opposite direction for low-income countries. In addition, unlike in high-income countries, political globalisation had no effect in low-income countries. The first impression from this result is that residing in a country with a low standard of living confers a benefit of globalisation concerning the incidence of suicide. Explaining the

relationship between suicide rate and country income level is more complex than demonstrating it. Nevertheless, these findings provided provocative evidence for the vulnerability paradox.[31] Similar to Dückers et al.[31] and Hofstede,[32] we hypothesised that higher degrees of individualism, a more equitable power distribution and less constraint in following fundamental human impulses may increase sensitivity to societal failure and restricted expectations. Rudmin et al.'s[33] findings for 33 countries also supported our hypothesis. Nevertheless, increased suicide rates and individualism do not necessarily mean that individualism is the root cause of the problem.[33] Political globalisation appeared to be the only subdimension of globalisation related to the high suicide rate in middle-income countries.

As Marsella[34] portrayed, with globalisation, we can travel from one culture to another as if we were riding the waves of television, the internet, movies and literature while avoiding natural and manufactured borders. By causing identity uncertainty and modifying cultural value frameworks, globalisation may indirectly affect the suicide rate.[8,13,35] In addition, suicide rates in high- and middle-income countries can be linked to the rise in health inequalities that comes with modernisation as socio-economic inequalities persist in health.[36]

In terms of the control variables, only depression had a statistically significant and positive effect on suicide for all models, implying that a higher prevalence of depressive disorders was linked to higher suicide rates. It is known that the degree of depressive symptoms and the risk of suicidal behaviour are strongly related.[37] The important finding here is changing the size

Table 4
Fixed-effects estimations of the effect of globalisation and subindices in high-, middle- and low-income country groups.

Variable	Model of suicide rate											
	High-income countries				Middle-income countries				Low-income countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Globalisation	1.190*** (0.242)				0.273** (0.119)				−0.364*** (0.115)			
Globalisation^2	−0.010*** (0.002)				−0.003** (0.001)				0.005*** (0.001)			
Economic globalisation		0.598** (0.225)				0.100 (0.071)				−0.205*** (0.054)		
Economic globalisation^2		−0.005** (0.002)				−0.001 (0.001)				0.003*** (0.001)		
Political globalisation			0.375*** (0.126)				0.155*** (0.056)				0.082 (0.051)	
Political globalisation^2			−0.003*** (0.001)				−0.002*** (0.001)				−0.001 (0.001)	
Social globalisation				0.835*** (0.201)				−0.037 (0.061)				−0.205*** (0.065)
Social globalisation^2				−0.007*** (0.002)				−0.001 (0.001)				0.003*** (0.001)
Depression	5.200*** (1.330)	5.398*** (1.521)	5.702*** (1.476)	5.695*** (1.498)	6.890*** (1.831)	7.142*** (2.162)	6.710*** (1.769)	7.054*** (1.836)	3.376*** (0.866)	3.503*** (0.980)	3.648*** (1.089)	3.479*** (0.855)
Income growth	0.052* (0.028)	0.038 (0.031)	0.032 (0.027)	0.026 (0.027)	0.008 (0.009)	0.010 (0.009)	0.010 (0.010)	0.011 (0.010)	−0.008 (0.005)	−0.007* (0.004)	−0.007* (0.004)	−0.006 (0.004)
Unemployment	0.092* (0.053)	0.077 (0.051)	0.102* (0.052)	0.075 (0.050)	0.080 (0.091)	0.091 (0.092)	0.078 (0.090)	0.096 (0.089)	0.024 (0.037)	0.030 (0.041)	−0.014 (0.038)	−0.009 (0.033)
Female labour participation	0.230* (0.120)	0.226* (0.126)	0.182 (0.123)	0.197* (0.110)	0.004 (0.118)	−0.017 (0.119)	0.033 (0.109)	−0.028 (0.117)	−0.015 (0.025)	−0.022 (0.028)	−0.036 (0.032)	−0.061** (0.029)
Rural population	−0.122 (0.078)	−0.149* (0.082)	−0.117 (0.075)	−0.112 (0.075)	0.043 (0.048)	0.042 (0.051)	0.021 (0.049)	0.034 (0.048)	−0.007 (0.033)	−0.036 (0.030)	−0.052* (0.030)	−0.024 (0.024)
Constant	−47.346*** (11.782)	−29.051** (11.224)	−19.785** (9.186)	−36.734*** (10.664)	−26.059*** (6.729)	−22.512*** (6.686)	−22.291*** (5.862)	−16.842*** (5.927)	−1.164 (5.345)	−2.393 (5.571)	−6.404 (5.902)	−2.199 (4.831)
Observations	1330	1330	1376	1376	2723	2694	2723	2723	785	782	785	785
Number of countries	48	48	50	50	98	97	98	98	29	29	29	29
Turning points	62.69	62.52	54.64	60.53	46.54	–	47.65	–	40.30	38.74	–	37.27
Mean globalisation	69.40	69.06	63.44	74.77	50.63	49.61	54.01	49.08	38.43	37.32	49.00	27.96
R-squared	0.586	0.532	0.545	0.544	0.225	0.193	0.228	0.222	0.613	0.585	0.559	0.624

Notes: Control variables remain the same for the estimation of the effect of globalisation, its subindices and their quadratic forms in income-based country groups, which are formed according to the World Bank Classification in the year 2019. We control for year fixed effects and use fixed effects models. Estimations report the unstandardised beta-coefficients. Robust standard errors are in parentheses. We calculate the turning point when indices and their quadratic forms are significant at least at 10%. The mean globalisation presents the average of the globalisation and its subindices based on different income levels.
***, ** and * indicate the significance levels at 1%, 5% and 10%, respectively.

of coefficients among the income-level country groups. According to Bhugra and Mastrogianni,[22] the symptoms of depression can vary from one culture to the next depending on factors, such as social norms, cultural differences and religious beliefs. Therefore, depression may be underdiagnosed in some cultures, and its relationship with suicide rates may vary widely from one society to another.

Strengths and limitations

This was the first study to use the recently revised KOF globalisation index and estimate suicide rates. The study findings provided guidance for improving suicide prevention measures at both the regional and international levels. We acknowledge that the index developed to measure globalisation has not yet been fully validated. On the other hand, it has been used in a considerable number of studies. Gozgor's[38] robust evidence showed that the construction of the KOF index of economic globalisation has not suffered from any significant measurement errors.

Similar to most other globalisation indices, the KOF Globalisation Index focused on measuring globalisation at the country level, omitting all within-country transactions.[18] Despite a sensitive methodology, the results might have been affected by time and country context.[8] Compared with high-income countries, low- and middle-income countries are more likely to underreport suicide rates.[8,9,39] However, this possible bias is generally recognised to be stable over time, even when potential sources of bias in data recording are taken into account. Although aggregate studies are more likely to result in methodological issues such as ecological fallacy, globalisation does not directly affect suicide rates at the individual level. However, as Neumayer[40] pointed out, the current findings showed that explaining variation in aggregate large-unit suicide data cannot be dismissed outright due to an alleged ecological fallacy.

Conclusion

We showed that globalisation and its subdimensions were positively associated with suicide rates in high- and middle-income countries, up to a point. The findings on globalisation and social globalisation in low-income countries are contrary to the results in high- and middle-income countries; we also found no significant relationship between political globalisation and suicide rates for this country group. According to our findings, policy-makers in high- and middle-income countries, below the turning points, and low-income countries, above the turning points, must address globalisation and its relationship with suicide carefully. We recommend protecting vulnerable groups from the negative consequences of globalisation's disruptive shifts, which can cause more significant inequalities in society.

Consideration of local and global factors of suicide will potentially stimulate the development of measures that might potentially reduce the suicide rate. In addition, individualist and market-centric approaches to policy-making should be redefined in favour of those that emphasise the well-being of society as a whole. In addition, there is a need for scholars to widen existing understandings of suicide prevention from individual- or community-level viewpoints to a global perspective, given the far-reaching implications of globalisation on societies throughout the globe. As this study only presented a general viewpoint on globalisation and its subdimensions, further research is needed before firm conclusions can be reached regarding the relationship between globalisation and suicide. For example, conducting a similar study based on age groups and gender will provide resources to define the target group for health policies more clearly. On the basis of global-

scale findings such as ours, more centralised research using country-representative data can directly investigate the mental health effects of globalisation on people in that region, which can be linked to suicide. Thus, we can uncover more specific underpinning mechanisms, such as 'how' and 'why' globalisation affects suicide.

Author statements

Ethical approval

Not applicable.

Competing interests

The authors have no competing interests to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhe.2023.01.026.

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